

CLAIMS

What is claimed is:

- 5 1. A method for forming patterned ITO structure by using photosensitive ITO solution, comprising:
 - providing a substrate;
 - forming a photosensitive ITO layer on said substrate; and
 - 10 patterning said photosensitive ITO layer.
2. The method according to claim 1, wherein said patterning step is performed without covering an additional photoresist layer on the photosensitive ITO layer.
3. The method according to claim 1, wherein said photosensitive ITO layer has
15 about 20-30 percentage of ITO in weight.
4. The method according to claim 1, wherein said photosensitive ITO layer is about 2-3 micrometers in thickness.
- 20 5. The method according to claim 1, wherein said photosensitive ITO layer is formed on the substrate by coating.
6. The method according to claim 5, wherein said photosensitive ITO layer is coated by slit coating, table coating, cap coating, spin coating, spraying coating,
25 or screen-print coating.
7. The method according to claim 1, wherein said patterning step comprises:
 - exposing said photosensitive ITO layer by a light source through a mask;
 - and
 - 30 developing the exposed photosensitive ITO layer.
8. The method according to claim 7, wherein said light source is ultraviolet rays, deep-ultraviolet rays, x rays, or yellow light.

9. The method according to claim 7, wherein said photosensitive ITO layer is developed by water, alkaline solution, or organic solution.

5 10. The method according to claim 1, before the patterning step, further comprising thermally treating said photosensitive ITO layer.

11. The method according to claim 10, wherein said thermally treating step is performed at about 100 degrees Centigrade.

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12. The method according to claim 10, wherein said thermally treating step lasts about 10-20 minutes.

13. The method according to claim 1, after the patterning step, further
15 comprising sintering said photosensitive ITO layer.

14. The method according to claim 13, wherein said sintering step is configured for curing said patterned photosensitive ITO layer.

20 15. The method according to claim 13, wherein said sintering step is configured for further removing a portion of said photosensitive ITO layer including an adhesive agent, resin, and photoresist.

16. The method according to claim 13, wherein said sintering step is
25 performed at about 500-600 degrees Centigrade.

17. The method according to claim 13, wherein said sintering step lasts about 10-30 minutes.

30 18. The method according to claim 13, wherein said patterned photosensitive ITO layer remains about 1 micrometer in thickness after the sintering step.

19. The method according to claim 13, before or after the patterning step,

further comprising drying said photosensitive ITO layer.

20. The method according to claim 19, wherein said drying step is performed at about 100-150 degrees Centigrade, and lasts about 10-20
5 minutes.